City of Alexandria, Virginia

MEMORANDUM

DATE: APRIL 7, 2003

TO: COUNCILWOMAN JOYCE WOODSON

THROUGH: PHILIP SUNDERLAND
              CITY MANAGER

FROM: CHARLES SAMARRA
              CHIEF OF POLICE

SUBJECT: SAVINGS AND RETURN ON INVESTMENT DUE TO USE OF
              MOBILE COMPUTERS

This memorandum is in response to your request that staff outline the savings and returns on the investments in reference to the mobile computers in the Police Department.

Cost of Technology

The Alexandria Police Department has 265 Panasonic Toughbook computers for sworn officers to use. These computers are fully functional laptops that are made rugged in order to survive the harsh environment and round the clock law enforcement use. One laptop with all the software installed and a mount for the car costs approximately $8,000. Although the laptop itself has a replacement schedule of three years, the software and mount can be re-used for several years beyond their initial purchase.

Time Savings

With the goal of saving officers' time, the Alexandria Police Department set out to determine benchmarks for standard queries. Prior to full implementation, test officers alternately ran license plates by radio and by computer, and determined that an average query could be returned 1.5 minutes faster by computer than by radio. Other similar tests were conducted as processes were automated. The result was that each automated task was assigned an accurate amount of time saved verses the traditional manner of completing the task. Monthly statistics were tracked and charted. The amount of data transmissions, in megabytes, was tracked and reported monthly, showing a gradual increase in data transmissions. Radio traffic was also monitored, borne out by the amount of silence on the radio during peak operational times and the discontinuation of an administrative channel.

Using an average Full Time Equivalent (FTE) position of 1,820 hours per year, Alexandria is able to compute the number of sworn officers and civilian position the

technology offsets though automation. An example is calculating the difference between the average times for hand entering an incident report verses the review of an electronic incident report. Mobile laptop technology in the police department has officially saved **6.4** police officer equivalents redeployed to operational functions. This benchmark was established and monitored by the Department of Justice (DOJ) as a condition of the COPS MORE funding for mobile computers. We met this goal in April 2001.

Beyond this benchmark we have conducted further analysis that relates to the broader impact this technology has on timesavings within the department. The following is a breakdown of the tasks and average annual timesavings which totals 18.6 equivalent positions due to the use of mobile computers.

- Electronic Messaging and Queries: 8,990.8 hours- 4.94 Sworn equivalent

- Electronic Report Transmissions: 782.6 hours- .43 Sworn equivalent

- Electronic Data Entry of Reports: 9,591.4 hours- 5.27 Civilian equivalent

- Other Data Processing: 3,458 hours- 1.9 Sworn equivalent

- Local Wanted/PRISM/Beat Check Databases: 1,263 hours- .69 Sworn equivalent

These savings have helped us have public officers spend less time on administrative matters and more on police work. We have also been able to maintain current staffing since administrative workloads did not increase and result in a need for more administrative positions to do such work.

Instant Access to Incident Data

The electronic report prints automatically, and the data from the report goes directly in to the Records Management System (RMS). The Records department staff would spend up to forty-five minutes per hand written report on data entry and correction. A records clerk can review and correct about eighteen electronic reports in the same forty-five minutes. This has significantly reduced the backlog of data entry, and allowed the officers and detectives' instant access to current information. Electronic field reporting has brought the data entry time for all reports to 24 hours or less.

Handwriting and spelling once caused data errors and confusion; however, electronic reports have virtually eliminated these problems. The typeface allows faster reading with less error, and the narrative section is equipped with a spell-checking feature. The entire report is now available electronically as opposed to searching through paper files. A handwritten narrative was not entered into computer databases; now all electronically completed reports are available either at a computer in the station or wirelessly on a mobile computer. Many detectives have noticed that compared to the handwritten reports the electronic reports contain more details in the narrative, assisting in criminal investigations.

Real-Time Crime Analysis

As mentioned above, crime data in Alexandria is available in our database within twenty-four hours of taking a police report. All incident information including names, addresses, dates, times, and narratives are available for query and analysis. This allows users to conduct real-time tactical, strategic, and administrative analyses of crime. The wealth of data available to users is truly great. For example, using the laptops, officers are able to run name queries on nearly *one million name records* stored in our databases. Similarly, they are able to query call for service and criminal incident data by various parameters (address, date, time, incident type). This can and does provide important information to officers responding to scenes and assessing situations.

Enhanced Communications

All one needs to do is listen to the silence on the primary police channel compared to the previous constant traffic. The Communications Section has been able to stop the practice of adding a second dispatch channel for administrative radio traffic. This increased efficiency also translates into officer safety, because now the officers are all on one radio channel, and can more closely monitor the activity in the city, as opposed to being on a different channel and missing key transmissions. The officers receive all the details of calls on the computer, eliminating the chance of missed information and radio traffic due to repeating the call information. Computer messaging has resulted in an annual reduction of approximately 9,000 hours of radio traffic.

Part of Police Culture

Officers have realized the benefits of the system, and are full of praise for the tools and efficiency it gives them. Almost daily they make comments such as:

- *"There are no forms to carry, and I don't have to see my sergeant all day."*
- *"I got another stolen car last night!"*
- *"The daily information bulletin is read at roll call maybe once a week. I can download and read it every day right on my computer."*
- *"How did we do it before the computers?"*
- *"I can't do my job without it."*

Although many officers began their police careers without any computer knowledge, they have become attuned to the capabilities technology brings them.

Criminal Arrests

The Tactical Computer System is being used daily as a tool to help the officers make criminal arrests. Some examples are:

An officer was backing up another officer on a traffic stop. He wrote in his report, "As vehicles passed me on the right, I would look at their license plate and run them through my computer to see if any were stolen...A 1982 Ford pickup truck drove by and I ran its Maryland license plate." The plate returned as stolen, and the officer stopped the car. He not only arrested the driver for the stolen license plate, but he also found that the driver was wanted in Alexandria for probation violation on a drug charge. This arrest would not have been made without the use of the computer. Prior to the Tactical Computer System officers might have run two or three license plates during their shift. Now some officers run two or three hundred license plates during their shift, resulting in more wanted suspects being apprehended and stolen cars being recovered.

Another officer was dispatched to a subway platform for an armed violent suspect wanted in a felonious assault case. The officer responded to the scene and wrote in the report, "I was familiar with the name of the subject and consulted a photograph, located on the MDB [mobile computer]..." The officer located the suspect as he was attempting to board a train. He was arrested, and a handgun was recovered, because the officer recognized him from the description and photograph on the mobile computer. The suspect was threatening further violence, and may have acted on those threats if he had not been captured that day.

Officer Safety

Officer safety is a concept that is hard to quantify, yet it is a key aspect of law enforcement. Each officer has an expectation that danger may be encountered, but it is an agency responsibility to minimize that danger to the extent possible. Some of the features that the Tactical Computer System brings to officer safety are:

The ability to push a button and see all the activity throughout the city: Often officers are unable to monitor the radio, whether on a call or in the booking room. It is vital to know where the other officers are and what type of calls they are on, so when help is needed, the response is swift. The Tactical Computer System gives the officers this information instantly.

Knowledge as a tactical advantage: Officers can use the computer to find out about cars or people before stopping them. Also, key information on locations and crime trends is available, allowing officers to patrol with a greater likelihood of preventing crime, or apprehending criminals. There are also several maps and diagrams loaded on the computers, so officers can plan their routes and set up perimeters on active calls.

Decreased radio traffic: The cleared administrative transmissions leave the radio channels open for emergency transmissions.

Officer safety lookouts: Officers can have instant updates on people weapons, or other lookouts that affect their safety.

4

Community Benefits

The community benefits from this technology as well. In the case of an endangered missing child, information and photographs can be sent to all officers in a matter of minutes, rather than hours, or not at all. The mobile data system allows officers to learn more about the community they patrol through updates on crime trends and citizen requests. Community events are advertised on the computers, resulting in a greater outreach to the citizens by individual officers. The system has even been used successfully to find a lost dog.

Alexandria's community based prosecutor, whose office is convenient to many low-income residents, uses the Tactical Computer System. He can discern which officers are on duty and communicate with them directly. He can retrieve reports electronically, rather than waiting for records clerks to locate and fax them. The chief prosecutor for Alexandria, Randolph Sengel, has stated that, *"The use of mobile wireless computer access to police reporting data has proven invaluable to prosecutors in the field. Alexandria's new community prosecution program puts a prosecutor working in a neighborhood where his impact and effectiveness is measured in hours on the street rather than behind a desk, and he would be working blind without this critical communication tool."*

Furthermore, due to the fact that our systems are integrated and data flows directly from the street to the databases, we are able to provide the public with up-to-date and accurate access to crime information via the Internet.

http://ci.alexandria.va.us/police/crime_reports/

Basic data from police reports are automatically published to the Web and available for query by a number of parameters. We have heard positive comments from the public on this site. Although the data elements are limited (no names, no narrative, block addresses) it still provides Alexandrian's critical information at their fingertips.

The Alexandria Police Department has made great strides in the implementation, use, and advancement of mobile computing. We are recognized leaders in this field and the benefits, as outlined above, are tremendous for the department and community at large. This technology has enhanced nearly every aspect of police work and we are excited about the implementation of future applications.

cc: The Honorable Mayor and Members of City Council
       Members, Information Technology Commission